GMT

GuardianMarineTesting

Bunker Fuel and Engineering Report

Vessel:	Prins Maurits	IMO Number:	9133836
Client:	Anthony Veder Rederijzaken B.V.	Report Number:	455303
Received by Lab:	11 Sep 2015	AWB No:	9124072683

Bunker Information

Bunker Port:	Lome
Bunker Date:	07 Sep 2015
Fuel Supplier:	Monjasa
Barge Name:	San Padre Pio

Bunker Receipt Information

Bunker Quantity:	45.096 MT
BDR Density 15°C:	888.4 kg/m³
BDR Viscosity 40°C	5.635 cSt
BDR Sulphur:	0.094 %

Fuel Quality Information

Grade Ordered:	DMA
Sulphur Level:	LOW

Seal Sample Information

Sent to Laboratory:	0244341
Ship's Retained:	0244342
Supplier:	0244343
Marpol Annex VI:	411988
Other:	Not Known

Characteristic	Method	Spec Limit	Result	Units	Outcome
Density @ 15°C	ISO 12185	890.0 MAX	883.8	Kg/m³	Pass
K Viscosity at 40°c	ISO 3104	6.0 MAX	5.571	cSt	Pass
Flash Point	ISO 2719	60 MIN	> 70.0	°C	Pass
Pour Point	ISO 3016	0	< -12	°C	Pass
Cloud Point	ISO 3015		21	°C	Warning
Sulphur Content	ISO 8754	0.10 MAX	0.13	% m/m	Fail
Cetane Index	ISO 4264	40 MIN	44	Index	Pass
MCR	ISO 10370	0.30 MAX	< 0.005	% m/m	Pass
Ash	ISO 6245	0.01 MAX	< 0.005	% m/m	Pass
Water Content	ISO 3733	0.10 MAX	< 0.02	% v/v	Pass
Appearance	Visual		Cloudy		
Total Acid Number	ASTM D664		< 0.05	mgKOH/g	

Calculated Values

Net Specific Energy	Calc	42.31	MJ/kg

Sample Information
From the information that was received with this sample, the following details of how the sample was taken have been ascertained:

Method: Continuous drip sampler
Location: Vessel Manifold
Collected in: Cubitainer

The supplier's representative was invited to witness the taking of the sample and was in attendance during the sampling.

The sample was received into the laboratory with seal number 0244341. The seal was intact on arrival at the laboratory and was broken so that analysis could commence.

Other Information
According to the information received with the sample, this bunker fuel was loaded in to storage tanks CENTRAL MDO on the vessel and was mixed with other fuel on board.

The planned changeover date to this fuel is 07 Sep 2015.

The vessel's next port is Houston, and her ETA there is 25 Sep 2015.

Interpretation of Results
Based on information received with regard to this sample, the fuel has been purchased in accordance to Grade DMA. The results of this sample have therefore been compared against this grade and the interpretations below are based on this assumption. Please be aware that all comments below are only for guidance and we would always recommend that advice from the engine manufacturers is obtained in combination with our advice.

SULPHUR TESTED BY METHOD ISO8754 EXCEEDS EU AT BERTH LIMIT
RESULT 0.13 % AGAINST LIMIT OF 0.10 MAX %
SAMPLE VALIDATION RECOMMENDED

The analysis carried out on this sample indicates that the sulphur tested as per method ISO8754 is above specification and exceeds the 95% confidence limits for this test.

The sulphur content of a fuel has become more and more a legal requirement and as such, the sulphur content result based on this sample indicates that it is above the limit set out in the EU Sulphur Directive for fuel to be used whilst at berth in EU ports.

Because the EU Sulphur Directive is a legal requirement, we recommend that the suppliers are put on notice for supply of non compliant fuel. The EU Directive requires that from 1st January 2010 fuels used by Ships in EU Ports whilst AT BERTH are to be limited to a maximum of 0.10% Sulphur content. Change over to the 0.10% max fuel is to be undertaken as soon as possible after arrival and as late as possible prior to the departure. Details & times of the changeover should be recorded in the Ships logbook.

AT BERTH, refers to ships secured at alongside, at anchor or on moorings. The directive applies whether the vessel is in operation or not.

As the result of this sample indicates that the sulphur is above the EU sulphur at berth limit, we recommend that the owners/managers of the vessel notify the Port and Flag State Administration of this result so that further advice can be provided by them.

Given this sulphur result, prior to the burning of this fuel in EU ports, we would recommend that a second sample is sent to GMT for verification purposes. So that this can be achieved, we request that the chief engineer sends GMT representative samples from the storage tank.

NOTE: If the tank sample(s) are to be taken from the transfer pump then the tanks should be circulated for at least 60 minutes prior to the drawing of the sample. Furthermore, the sampling point at the transfer pump and from the point where the before and purifier samples are taken from should be cleared of all other product by running through several litres of this fuel prior to the taking of the sample.

WARNING: CLOUD POINT TESTED BY METHOD ISO 3015 IS HIGH.
POSSIBILITY OF FUEL TRANSFER PROBLEMS IF THE TEMPERATURE OF THE FUEL IS NOT MAINTAINED ABOVE THE CLOUD POINT.
CFPP TEST IS RECOMMENDED.

The analysis carried out on this sample indicates that the Cloud Point tested as per method ISO 3015 is

high.

The Cloud Point is the temperature at which wax crystals first appear in the fuel causing the appearance to turn from clear to cloudy. This in itself should not cause the vessel any operational difficulties.

However, as the temperature of the oil decreases the crystal formation increases. As the oil temperature decreases further, eventually there will be enough wax crystals to block the engine fuel filters, the Cold Filter Plugging Point (CFPP), at which point the engine will stop through fuel starvation.

Distillate fuels are often supplied with wax modifiers which ensure that the CFPP is low enough not to cause filter blockages. Issues can arise when the fuel is supplied without a wax modifier and/or the fuel is stored on board at temperatures below the CFPP.

Vessels operating in cold waters and/or without heated storage tanks are at the greatest risk of the effects of fuel with poor cold flow properties.

Given the high Cloud Point of this fuel, it is recommended that the CFPP test is carried out so that any potential fuel transfer problems can be avoided prior to using the fuel.

Should you wish to proceed with the CFPP test, please contact GMT for further details.

If the vessel has no alternative other than to use the fuel without further investigation then it is important that the fuel is stored above the reported cloud point to avoid fuel transfer problems.

Report Approval
This report has been created and approved by Chris Manuel on the 12 Sep 2015.

Notes